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EXAMINER	
RIVELL, JOHN A	

ART UNIT	PAPER NUMBER
3753	

DATE MAILED: 08/27/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)
	10/069,910	SHENG, XIAYANG
	Examiner	Art Unit
	John Rivell	3753

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *2/28/02 (application)*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-10 and 12-30* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-6,9,10,12 and 14-30* is/are rejected.

7)☒ Claim(s) *7,8 and 13* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *28 February 2002* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *02282002*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

The substitute specification filed February 28, 2002 has not been entered because it does not conform to 37 CFR 1.125(b) and (c) because: the statement as to a lack of new matter under 37 CFR 1.125(b) is missing and the substitute specification has been filed containing claims (to be amended).

By preliminary amendment filed February 28, 2002, claim 11 has been canceled. Claims 1-10 and 12-30 are pending.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 23-29 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 23 recites the limitation "the valve system" in line 6. There is insufficient antecedent basis for this limitation in the claim.

The remaining claims are included due to dependency.

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 3, 5, 6, 9 and 23-29 are rejected under 35 U.S.C. §102 (b) as being anticipated by Richards.

The patent to Richards discloses "a pressure regulator for connecting a pressure source to an inflatable object, comprising: a hollow casing (body 11) having a fluid inlet end (at 23), a fluid outlet end (at 16), and a side wall; a valve system (tire valve core 38) positioned inside the hollow casing, a fluid inlet (through connection 23) connected to the valve system, the inlet located at the fluid inlet end of the hollow casing and adaptable (threads 23) for connection to a pressure source (column 2, lines 46-50); a fluid outlet (at 16) located at the fluid outlet end of the hollow casing, the outlet adaptable (via nut 57 or threads 84 in fig. 3) for connection to an inflatable object (the tire connected to tire rim 54), a fluid conduit (at bores 28, 36, 37) positioned inside the hollow casing between the fluid inlet and the fluid outlet; a pressure-sensing structure (surface 46 on piston 34) attached to the conduit, the pressure-sensing structure movable inside the hollow casing in the longitudinal direction; and a pressure-generating structure (spring 32) disposed inside the hollow casing and attached to the pressure-sensing structure (piston 34), the pressure-generating structure (spring 32) capable of exerting a bias force upon the pressure-sensing structure in proportion to a desired pressure in the inflatable object, wherein the pressure regulator is capable of inflating the object when the initial pressure inside the inflatable object is lower than the desired pressure, and the pressure regulator is capable of automatically terminating inflation when the pressure inside the object reaches the desired pressure; wherein the valve system is actuated by the conduit which moves longitudinally with the pressure-sensing structure in response to the pressure differential between the two sides of the pressure-sensing structure" as recited in claim 1.

Regarding claim 3, in Richards, "the pressure-sensing structure is a piston (34)" as recited.

Regarding claim 5, in Richards, "the piston is an O-ring (at O-ring 44) piston" as recited.

Regarding claim 6, in Richards, "the pressure-generating structure is a coil spring (32) disposed between the pressure-sensing structure (piston 34) and a spring collar (at shoulder 33)" as recited.

Regarding claim 9, in Richards, "the valve system (at tire valve core 38) is a Schrader valve" as recited.

Regarding claim 23, Richards discloses "a pressure regulator for connecting a pressure source to an inflatable object, comprising: a hollow casing (11) having a fluid inlet end (at 23), a fluid outlet end (at 16), and a side wall; means (piston 34) for actuating fluid flow in response to a preset pressure, the means for actuating fluid flow positioned inside the hollow casing; a fluid inlet connected to the valve system (tire valve core 38), the inlet located at the fluid inlet end of the hollow casing and adaptable for connection to a pressure source; a fluid outlet located at the fluid outlet end of the hollow casing, the outlet adaptable for connection to an inflatable object (the tire connected to rim 54); fluid passage means (28, 36, 37) positioned inside the hollow casing between the fluid inlet and the fluid outlet, a pressure-sensing means (surface 46 on piston 34) attached to the fluid passage means, the pressure-sensing means movable inside the hollow casing in the longitudinal direction, and a pressure-generating means (spring 32) disposed inside the hollow casing and attached to the

pressure-sensing means, the pressure-generating means capable of exerting a bias force upon the pressure-sensing means in proportion to a desired pressure in the inflatable object, wherein the pressure regulator is capable of inflating the object when the initial pressure inside the inflatable object is lower than the desired pressure, and the pressure regulator is capable of automatically terminating inflation when the pressure inside the object reaches the desired pressure" as recited.

Regarding claim 24, the device of Richards is "a product made according to claim 23" as recited.

Regarding claim 25, in Richards, "the product is a tire valve" as recited.

Regarding claim 26, in Richards, "the product is a tire valve extension" as recited.

Regarding claim 27, in Richards, "the product is a flow control device" as recited.

Regarding claim 28, in Richards, "the product is a tire inflating or deflating device" as recited.

Regarding claim 29, in making and/or using the device of Richards, one necessarily performs "a method of inflating or deflating an inflatable object comprising using the pressure regulator" as recited.

Claims 1 and 6 are further, and claims 14-20 are rejected under 35 U.S.C. §102 (b) as being anticipated by Lutes.

The patent to Lutes discloses "a pressure regulator for connecting a pressure source to an inflatable object, comprising: a hollow casing (body 11) having a fluid inlet end (at 17), a fluid outlet end (at 18), and a side wall; a valve system (valve head 19) positioned inside the hollow casing, a fluid inlet (through connection 17) connected to

the valve system, the inlet located at the fluid inlet end of the hollow casing and adaptable (coupling 16) for connection to a pressure source (page 1, lines 36-40); a fluid outlet (at 18) located at the fluid outlet end of the hollow casing, the outlet adaptable (via the illustrated inflation chuck in figs. 1 and 2) for connection to an inflatable object (a tire), a fluid conduit (at bore 15) positioned inside the hollow casing between the fluid inlet and the fluid outlet; a pressure-sensing structure (diaphragm 14) attached to the conduit (15), the pressure-sensing structure movable inside the hollow casing in the longitudinal direction; and a pressure-generating structure (spring 22) disposed inside the hollow casing and attached to the pressure-sensing structure (diaphragm 14), the pressure-generating structure (spring 22) capable of exerting a bias force upon the pressure-sensing structure in proportion to a desired pressure in the inflatable object, wherein the pressure regulator is capable of inflating the object when the initial pressure inside the inflatable object is lower than the desired pressure, and the pressure regulator is capable of automatically terminating inflation when the pressure inside the object reaches the desired pressure; wherein the valve system is actuated by the conduit which moves longitudinally with the pressure- sensing structure in response to the pressure differential between the two sides of the pressure-sensing structure" as recited in claim 1.

Regarding claim 6, in Lutes, "the pressure-generating structure is a coil spring (22) disposed between the pressure-sensing structure (14) and a spring collar (24, 25)" as recited.

Regarding claim 14, in Lutes, "the spring collar (at 24) is connected to at least one screw (read on extension 25) which extends outside the side wall of the hollow casing" as recited.

Regarding claim 15, in Lutes, "wherein the setting for the desired pressure is adjusted by sliding the screw (25) along a longitudinal slot (26) formed in the side wall of the hollow casing" as recited

Regarding claim 16, in Lutes, "a bellows (read at flexible tubing section 21) is disposed between the spring collar (24) and the fluid outlet (18)" as recited.

Regarding claim 17, in Lutes, "a component (nut 23 is provided) for presetting the desired pressure in the inflatable object" as recited.

Regarding claim 18, in Lutes, "a pressure indicator (at scale 27 is) disposed in the hollow casing" as recited.

Regarding claim 19,in Lutes, "the pressure indicator is a marker" as recited as shown in fig. 1 as the numerical markings 27.

Regarding claim 20, in Lutes, "the (marker) is attached to the outside of the conduit" as recited.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 2 and 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Richards in view of Nichols.

The patent to Richards discloses all the claimed features with the exception of being "capable of deflating the object when the initial pressure inside the inflatable object is higher than the desired pressure, and the pressure regulator is capable of automatically terminating deflation when the pressure inside the object reaches the desired pressure" (claim 2) and "effectuating fluid release from the inflatable object and through the fluid conduit if the desired pressure is lower than the initial pressure in the inflatable object" (Claim 30). Both of these claim limitations recite function and do not require structural elements performing the recited function.

The patent to Nichols discloses that it is known in the art to employ a pressure regulator generally in figure 1, which includes a pressure sensitive element at diaphragm 34 which incorporates a valve device at 35, 42 and 43 which is "capable of deflating the object (attached at outlet conduit 16) when the initial pressure inside the inflatable object is higher than the desired pressure, and the pressure regulator is capable of automatically terminating deflation when the pressure inside the object reaches the desired pressure" for the purpose of relieving the higher than desired pressure value if present initially in the inflated object upon connection of the device to the inflated object.

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to employ in Richards elements "capable of deflating the object when the initial pressure inside the inflatable object is higher than the desired pressure, and the pressure regulator is capable of automatically terminating deflation when the pressure inside the object reaches the desired pressure" for the purpose of relieving the higher than desired pressure value if present initially in the inflated object upon connection of the device to the inflated object as recognized by Nichols.

Regarding claim 30, the method step of "effectuating fluid release from the inflatable object and through the fluid conduit if the desired pressure is lower than the initial pressure in the inflatable object" is necessarily performed in the combination of references which incorporates the teachings of Nichols.

Claim 4 is are rejected under 35 U.S.C. 103(a) as being unpatentable over Richards in view of Jackson.

The patent to Richards discloses all the claimed features with the exception of having "the piston of the lip type".

The patent to Jackson discloses that it is known in the art to employ a "lip type" piston at piston 15 including sealing "lip" 12 for the purpose of sensing pressure in the inflated object and exerting control in response to the sensed pressure. As compared to Richards, the differences here, an O-ring seal versus a "lip" seal are clearly functional equivalents.

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to employ in Richards a "lip" type piston in place of the O-ring type piston in Richards for the purpose of sensing pressure in the inflated object and exerting control in response to the sensed pressure as recognized by Jackson.

Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Richards in view of Moore (cited by applicant).

The patent to Richards discloses all the claimed features with the exception of having the "valve system (being) a ball valve".

The patent to Moore discloses that it is known in the art to employ a ball valve element 58 in a tire inflation stem for the purpose of controlling tire inflation pressures.

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to employ in Richards a ball valve element in place of the

head and seat in the tire valve core 38 of Richards for the purpose of controlling inflation pressures as recognized by Moore.

Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Richards or Lutes in view of Walker.

The patents to Richards or Lutes disclose all the claimed features with the exception of having "a reed disposed in the fluid flow path".

The patent to Walker discloses that it is known in the art to employ a reed 209 in a whistle 206 in the fluid flow path from an inflated object for the purpose of indicating the act of deflation to the user.

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to employ in Richards or Lutes a reed valve element in the flow path therein for the purpose of indicating the act of fluid flow as recognized by Walker.

Claim 21 and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Richards or Lutes in view of Zimmer.

The patents to Richards or Lutes disclose all the claimed features with the exception of having "a flow indicator" (claim 21) being "a visual ball display" (claim 22).

The patent to Zimmer discloses that it is known in the art to employ, in combination with a pressure regulator, shown generally at 57, a flow indicator at transparent cover 53 and ball 25 in which ball 25 is visible through cover 53, the height of ball 25 indicating a particular flow rate for the purpose of indicating to the user the actual flow rate of fluid through the regulator.

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to employ in Richards or Lutes, a flow indicator including

a transparent cover and ball element responsive to the flow of fluid for the purpose of indicating to a user the actual flow rate through the regulator as recognized by Zimmer.

Claims 7, 8, and 13 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to John Rivell whose telephone number is (703) 308-2599. The examiner can normally be reached on Mon.-Thur. from 6:30am-5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dave Scherbel can be reached on (703) 308-1272. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

John Rivell
Primary Examiner
Art Unit 3753

j.r.